TECHNICAL MEMORANDUM

LANDAU ASSOCIATES
ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

TO: Carl Bach and Dan McCormack, The Boeing Company

FROM: Kris Hendrickson and Mario Lopez

DATE: February 16, 2007

RE: NBF – SOIL EVALUATION IN AREA OF STORM DRAIN LINE REROUTE

This document presents the results from the soil investigation at the North Boeing Field site along the proposed storm drain reroute between building 3-332 and the Seattle City Light Georgetown Steam Plant property. The purpose of this investigation was to document soil conditions along the proposed reroute area between MH187 and MH181A (see Figure 1).

This soil investigation consisted of five exploration borings located along the planned storm drain reroute. Six boring locations were proposed in the work plan, but SLR-6 was not drilled because the drilling rig could not access the planned location. On November 22, 2006, Cascade Drilling was onsite to do the boring investigation with the supervision of Nathan Moxley of Landau Associates and Jennifer Parsons of Boeing. At each location, the driller hand-augered to at least 3 ft below ground surface (BGS) to allow discovery of unknown utilities not identified by the private locator. Boring logs can be seen on Figures 2 through 7.

At each boring location, soil samples were collected at three different 1-ft intervals (1 to 2, 3 to 4, and 5 to 6). In two of the borings (SLR-2 and SLR-3), the driller encountered obstructions and the boring locations were moved north or south of the proposed locations. Samples from SLR-3 were collected from two different boring locations (see Figure 1). All samples were field-screened visually for the presence of petroleum hydrocarbons and volatile organic compounds (VOCs). Based on field screening results, one sample was selected for VOC analysis using U.S. Environmental Protection Agency (EPA) Method 8260, four samples were selected for TCLP metals analysis using the EPA Toxicity Characteristic Leaching Procedure, and three samples were selected for diesel-range and oil-range petroleum hydrocarbons analysis using the Washington State Department of Ecology (Ecology) Method NWTPH-Dx. All soil samples were analyzed for polychlorinated biphenyls (PCBs) using EPA Method 8082. Upon completion of the boring investigation, each boring was abandoned by filling the borehole with bentonite chips and covering the upper 6 inches with cold-patch concrete. Soil cuttings were contained in a drum, labeled, and stored in a secured area.

PCBs were detected in all samples; the highest concentrations were found at SLR-2 and SLR-3. Barium was the only TCLP metal detected; all results were less than the dangerous waste criteria. Diesel-range and/or oil-range petroleum hydrocarbons were detected in each sample analyzed. Several VOCs were detected in the sample analyzed. Table 1 presents the soil analytical results.